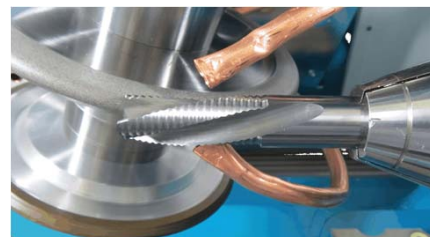
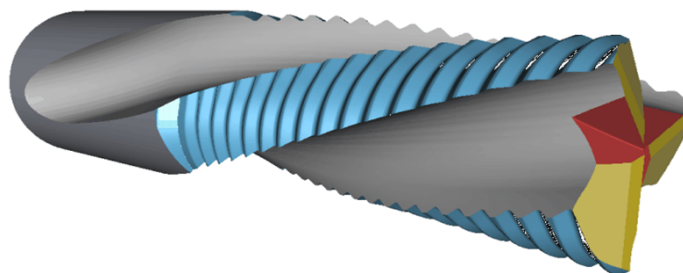













Roughing Endmill Ø20 Z3

A01-800

The shape of the flute of roughing endmills with negative helix can be optimized using a form wheel, where the runout length of the wheel towards the shank is reduced. The roughing profile is ground using a DXF-formwheel as sketched below. The single peak form allows to use the same wheel for various pitches of the profile.



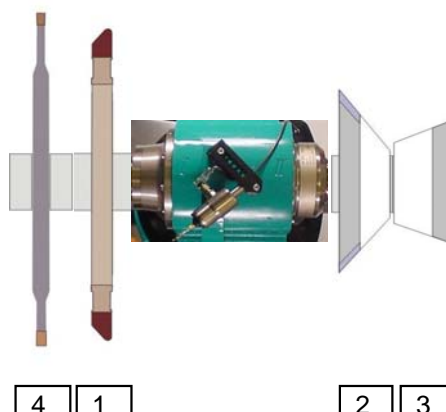
1. Cycletime for Production

Workpiece:	Ø 20 mm, Z 3, Length 50 mm, Helix -20°					
Material	CARBIDE					
Operations						
Feed [mm/Min]	2000	55	100	60	120	400
Power [kW]		8	2	1	1	3
Cutting feed [m/s]		18	22	22	22	22
Used wheels						
Grinding time [s]	12	228	42	57	35	460
Total cycle time	13 Min 54					

The cycle times are indicative. Material to be ground, grinding wheels, coolants can influence the cycle times considerably.

2. Used Grinding Wheels

1	1V1 Ø175 D64 DXF
2	12V9 Ø125 D64
3	11V9 Ø100 D64
4	14A1 Ø200 D64



3. Machine and Software Requirements

Machines: 5 axes CNC grinders : GEMINI DMR 15 kW
 Control: Fanuc 31i
 Accessories:
 Responsible engineer: OP. 15.11.10

Coolant: Synthetic Oil, pressure 6 bar
 Software: Quinto 5

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TECHNOLOGY
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